





[illegible][illegible]

[0026] Microcontrol 514 is coupled to the front end and transceiver 512. Microcontrol 514 controls the next vector transmitted by transceiver 512. Microcontrol 514 also controls the next vector received by transceiver 512. Microcontrol 514 is coupled to the non-linear center of the BCA record. The BCA record is used to perform a step 75, to determine if the pickup is a stopping information reflected from the BCA data record. If step 75 tests No, the pickup may have been non-positioned and is a stopping record. If step 75 tests Yes, the pickup is a stopping record. If the BCA record is located in a non-standard position, the BCA record is located in a standard position.

23 This is not as surprising as it seems. In the transducer before  
24 repositioned at step 75, in a positive relative direction be-  
25 wards the disk color edge to sample the BSA  
26 record. The disk color edge is, for example, represented  
27 500 tracks. This is approximately one third of the BSA  
28 record's length. This allowed moving the transducer to  
29 the disk color edge a full revolution in step 75,  
30 and then the disk color edge a half revolution in step 76,  
31 and then the disk color edge a quarter revolution in  
32 step 77. This is a sequence of steps that is not a part of the  
33 search sequence, but is a part of the transducer se-  
34 quence performed as part of the search se-  
35 quence, step 95, as depicted as part of the search se-  
36 quence performed at location 16c.

[illegible][illegible][illegible]

300 and 300s, which are provided by a common data record.

[0023] The sets of data read at strips 200 and 250 are coupled for demodulation in respective steps 300 and 350 with the demodulated data coupled for temporary storage at steps 400 and 400s. Data sets acquired from pickup position 40 are read from storage at step 450 and coupled to error correction at step 500, for example Reed Solomon controllably implemented by exemplary processor 510 of FIGURE 2. The error correction is tested at step 500 to determine if error correcting was successfully accomplished with a YES terminating step 550, and if not, a NO terminating step 560, which leads to data accumulation at step 580. When error correcting was successfully accomplished with a YES terminating step 550, data accumulation at step 580 is also accomplished.

the data was uncorrectable and a counter is decremented at step 810. The counter is set to a value of  $N-1$  where  $N$  represents the number of data sets acquired at each read position. The value of counter 810 is tested at step 820 for equality with zero to determine if all data sets at the particular read position have been error corrected. If step 820 tests NO the next BGA data set is read memory 10 in response to step 850. In this way a control loop 501 is established which sequentially presents each data set for error correction.

**[0035]** Step 620 sets a YES, when all data sets at the particular need position, for example Ri have been error processed and found to be unconnectable, causing step 640 to initiate reading of BCA data sets acquired at step 840 to populate register Rb. In addition the YES at step 820 sets or loads the value N-1 as step 810 and increments a counter at step 850. As just described, control loop 601 sequences through the data stored from transducer position Rb and, for example, none of the data is error connected which results in step 840 initiating a reading of data from 1 exemplary position Rb. Once again the counter at step 850 is incremented and tested at step 865 for equality with a value M which represents the number of jumps performed by the transducer. Thus

when the counter at step 8650 is equal to 1, step 8655 starts YES indicating that all data and all error correction procedures have failed after error correction. Hence failure to correct the error is indicated by YES. The error correction methods may employ a serial procedure of data acquisition and error correction with erroneous data indicating a request for additional BGA data from the disk.

## Claims

1. A method for acquiring data from a recording on a disk medium, comprising the steps of:

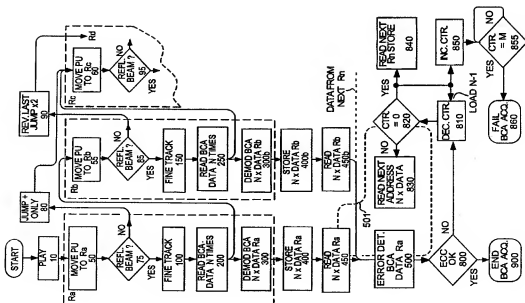
- a) successively reading bits (BCAD) defining a data set (BCA DATA) from different parts of said disk;
- b) continuously error correcting said bits (BCAD) to validate at least a part of said data.

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- set (BCA DATA) read from said disk, and:  
 c) terminating said reading upon successful validation of said data set by said error correcting step.
2. The method of claim 1, further comprising the step of:  
 a) initiating said reading at a nominal center (Rn) of said data recording (Rd).
3. The method of claim 1, further comprising the step of:  
 a) reading said data set (BCA DATA) from a first position (R1) on said data record;  
 b) reading said data set (BCA DATA) from a second position (R2) radially spaced from said first position (R1) absent acquisition of an error free data set (BCA DATA) from said first position (R1); and  
 c) reading said data set (BCA DATA) from a third position (R3) radially spaced in the same direction beyond said second position (R2) absent acquisition of an error free data set (BCA DATA) from said second position (R2).
11. The method of claim 10, further comprising the step of:  
 a) reading said data set (BCA DATA) from said second position (R2) until a first error free data set (BCA DATA) is acquired from the same direction beyond a preceding position (Rn) absent acquisition of an error free data set (BCA DATA) from said preceding position (Rn).
12. The method of claim 10, further comprising the step of:  
 a) terminating said reading of said data set (BCA DATA) from said plurality of positions (R1, R2) upon acquisition of an error free data set (BCA DATA).
13. The method of claim 10, further comprising the step of:  
 a) locating said first reading position at a nominal edge (R1) (R5) of said data record.
14. The method of claim 10, further comprising the steps of:  
 a) testing said first reading position (R1) for a presence of a reflected signal and absent said signal, and  
 b) recording a reading position (R2) in the absence of a reflected signal.
15. A method for acquiring BCA data from a record on a disk medium, comprising the steps of:  
 a) reading a BCA data set beginning from a first position within said data record;  
 b) absent valid BCA data from said data set, locating for a BCA reflection at a second position in the same direction beyond said first position;  
 c) in the absence of said BCA reflection, testing

for said BCA reflection at a third position radially spaced from said second position;  
 d) in the presence of said BCA reflection, reading said BCA data set beginning from said second position;  
 e) in the absence of said BCA reflection, testing for said BCA reflection at a fourth position radially spaced from said third position;  
 f) in the presence of said BCA reflection, reading said BCA data set beginning from said third position;  
 g) in the absence of said BCA reflection, testing for said BCA reflection at a fifth position radially spaced between said first and said second positions and between said second and said third positions in the same direction or in opposite directions responsive to said presence or absence of said BCA reflection.





EUROPEAN SEARCH REPORT

Application Number  
EP 00 40 3146

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